

Sensing Voice

Materiality and the Lived Body in Singing and Listening

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ABSTRACT Through a consideration of the underwater singing practiced by contemporary American soprano and performance artist Juliana Snapper, this article addresses the inherent relation between materiality and the voice, the sensed and the embodied. I focus on the physical and sensory properties of singers' and listeners' bodies; the space within and the matter through which sound disperses; and how the relation between these aspects plays an integral part in what it feels like to sing, and what it is possible to hear. I aim to demonstrate that a *sensory reading* of singing and listening may capture dimensions of the voice that are difficult, if not impossible, to account for using conventional analyses of music or standard readings of vocal repertoire. However, a sensory approach to sound does not offer a stable explanation of what sound or music *is*. Instead each such

account unveils a composite manifestation of our understanding of sound at a given moment in time and space.

KEYWORDS: voice, water acoustics, body and listening, feminist philosophy

Prelude



In 2007 I received an invitation to a recital that would take place in my bathroom. The artist offered to come to my home and present an underwater concert in my tub. My reaction? "Crazy," I thought. "Why go to the trouble of singing in an element so far from ideal?" I scoffed at the idea, and failed to take the artist up on her offer. But her endeavor lingered in my thoughts, caught there like a snag, returning often to my mind with no apparent purpose. After a year of mulling it over, I finally realized that what I had dismissed for its hopeless impracticality might, precisely because it was impractical, offer fresh perspectives on singing and listening by resituating those familiar activities in vastly unfamiliar territory.

Introduction

What is familiar to those who study Western music is that which can be written down. Common methods of musical representation and analysis evidence Western culture's preoccupation with what notation can capture and preserve. Traditional Western scores emphasize music's measurable parameters such as pitch, rhythm, and duration. Even in contemporary works and studies, where traditional scores are not wholly relevant, sound waves, timelines, algorithms, diagrams, and charts maintain the traditional tendency to quantify music. Consequently, the abstractly yet fixedly *notated* overshadows the concrete, ever-shifting *experience* of music. In vocal studies, this orientation plays out as a privileging of dramatic, structural and semiotic content (libretto, score), and sociohistorical context over the distinct quality, or timbre, of each individual voice in each performance of each work. Generally, Western music studies favor the idealized and abstract at the expense of the sensible, unrepeatable experience.¹

Conceiving the voice as a generic vehicle for words, pitches, and duration results in the neglect of key vocal and sonic dimensions that are not traditionally notated. By considering the underwater singing practices of Juliana Snapper (1972–), an American soprano and performance artist who works in experimental music, this essay points the way toward those aspects of music that are inaccessible to standard notation but available to all our perceiving senses. Snapper's work opens a window on the physical and sensory properties of singers' and listeners' bodies; on the spaces and materials in which sound disperses; and on these aspects' collective

indispensability to singing and listening as lived experiences. Because sensory readings of singing and listening reach for dimensions of voice and sound that are difficult, if not impossible, to account for with conventional analytical methods, multisensory perspectives may enrich the analysis of musical sound in general, and vocal practices in particular.

In musicology, the scholarly perspective from which this piece is written, great strides have been made towards a thorough consideration of the body's role in musical experience (including Poizat 1992; Dunn and Jones 1994; Cusick 1999; Becker 2004; Gordon 2004; Le Guin 2006; Szendy and Nancy 2008; Meizel, forthcoming). Scholars working outside musicology have made significant progress in considering how the full spectrum of sensory experience contributes to our interpretation of sound and music (including Idhe 1976; Calame-Griaule 1986; Koestenbaum 1993; Kahn 1999; Massumi 2002; Connor 2004; Helmreich 2007; Nancy and Mandell 2007; Dyson 2009; Serres 2009; Henrique 2010; Rodgers, forthcoming), but less has been done to address particular works of music from multisensory perspectives.

A growing number of fields now consider the qualities of sounds themselves, not only their iconographies. As Steven Feld and Donald Brenneis recognize, "Sound has come to have a particular resonance in many disciplines over the past decade. Social theorists, historians, literary researchers, folklorists, and scholars in science and technology studies and visual, performative, and cultural studies provide a wide range of substantively rich accounts and epistemologically provocative models for how researchers can take sound seriously" (2004: 461). Recent work reflects on the soundscapes of everyday life and the spaces we inhabit (Bull 2000; DeNora 2000; Fox 2004; LaBelle 2010), the recovery of sound and soundscapes across time (Corbin 1999 [1998]; Kahn 1999; Thompson 2004 [2002]), the science of sound (Gouk 1999; Thompson 2004 [2002]) and listening practices (Sterne 2003; Erlmann 2004; Hirschkind 2006; Helmreich 2007; Nancy and Mandell 2007; Szendy and Nancy 2008). This article aims to extend these extant works' perspectives on sound, listening, and singing in ways that may both challenge and relate to musicology while contributing to the general body of sensory scholarship.

In what follows I will approach the sound of the voice from a sensory perspective that transcends audition, focusing on sound's transduction through various types of matter and examining the body's physical relationship with sound.² I will begin by narrating Juliana Snapper's journey toward her underwater singing endeavor, the *Five Fathoms Opera Project* begun in 2007, positioning it within her catalogue of vocal work. Focusing on the interactive component of the *Opera Project*, I will describe her underwater practice by recounting a workshop in which I participated, led by the artist herself, and by drawing on conversations about her own practice.

I will situate her work among other contemporary vocal practices. Incorporating feminist philosophies on the materiality of the body, I hope to reveal the ways in which examining voice and listening along with all the intermingling senses may help us to understand that the experience of sound is temporal – arising and coagulating only to pass all too quickly. Thus a musical experience is not *something* that can be captured in notation, but an open-ended and pluralistic negotiation with sound in all its physicality. Such a negotiation also involves the images, myths, and ideologies that shape how people think of sound in a given time and locale. In short, examining a vocal practice that displaces singing from its habitual environment, the air, reveals deficiencies in traditional musical analyses' approach to sound, and offers avenues through which to reconsider the ontological status of materials in which we sing and hear.

Pushing the Limits of Voice and Body

As is probably clear by now, my invitation to a bathroom performance came from Juliana Snapper. Snapper's work experiments with (or perhaps against) the limits of her voice and body, challenging her physical abilities as well as her imagination. The venues for her underwater operas range from bathtubs to Olympic-sized pools.³ Performing in an unfamiliar element forces the vocalist to confront the processes involved in singing on the most fundamental level: How do I get air? Do I emit the sound from my mouth or vibrate it through my bones into the water? How can I share the sound with my audience? Snapper addressed these questions through trial and error.

As a classical singer who trained for most of her life in order to gain complete control of her voice, Snapper began a journey toward unsettling that foundation. She wanted to complicate her performing relationship with her instrument, her voice, by pulling the rug out from underneath herself, so to speak, implementing techniques that would undo her hard-earned control. She found that "the operatic instrument is actually incredibly tough" and difficult to disturb. "I started really delving into this idea of the prepared body with Ron [Athey]," says Snapper, recalling their collaborative explorations that would culminate in *The Judas Cradle* (2005–7) (Figure 1):

© We had a hell of a time trying to get my voice to break down under stress. We had me folding over jungle gym bars and contorting every which way before discovering that hanging upside down, with a slight arch to the back, will undo the vocal mechanism over the course of several minutes. (Kumerdej 2008)

Through rigorous experimentation, Snapper located the point at which she, as a singer, lost control, allowing her voice to take over as an autonomous, driven, and determined entity. Her own



Figure 1
Snapper singing upside
down in *The Judas Cradle*.
(Photo by Manuel Vason.)

voice hastened her to places where her knowledge of singing and her artistic imagination could not take her. In other words, she discovered that allowing the physicality of her instrument, rather than prewritten instructions or preconceived ideas, to dictate the sound of her performance led her to new possibilities. Meditating on the human capability to misuse other peoples' bodies, *The Judas Cradle* is a sadomasochistic drama with a musical collage of opera (Monteverdi, Puccini), prelinguistic sounds, and baroque costumes and staging. Opera, as well as the heterosexual, gendered body, is parodied through excess. The man, Athey, is bald; covered in a few pieces of leather that reveal most of his tattoo-covered body. The

woman, Snapper, is dressed in an enormous dress and wig, with exaggerated make-up and overflowing breasts.

Following *The Judas Cradle* tour, Snapper took her voice on the ultimate ride, embarking on a series of underwater experiments. If singing upside down limited her vocal control, singing underwater would instantly jettison twenty-five years of training. Any rules had yet to be discovered.

Flood and Rapture

Snapper began her underwater project in aghast response to an historic environmental disaster, which was met with reactions ranging from the apocalyptic to the utterly indifferent. Watching Hurricane Katrina on television from the West coast, Snapper bore horrified witness to an emerging awareness of our changing climate, as fear of flooding and drought turned to a full-on politics of disaster. She watched Evangelical Christians absorb climate change into their idea of the rapture: the biblical end of time in the form of melting glaciers and rising sea levels. A Judeo-Christian perspective is predisposed toward a linear sense of time and the "progressive" inevitability of events. The end of the world is thus inexorable, and often depicted as an uncontrollable flood – not as a gateway to cleansing and renewal, as with Noah's Ark, but as an eternal doom, an irreversible watery state. The element from which we ascended billions of years ago, which we depend on for survival, enjoy in recreation, and use as a means of transportation, is also the unstoppable punishment that will obliterate humanity from the earth. Therefore, even as scientists search for clues to the beginnings of civilization, others predict the end of time, wondering: What are the signs? What deeds might trigger events of such magnitude? And how should we act when we are faced with the rapture?

Outraged by Evangelical views of the supposedly "inevitable" suffering wrought by Katrina, and appalled at the inertia of the unaffected populace who, dry and warm in their living rooms, watched the flood unfolding, Snapper began to reflect on water's relationship with society.⁴ Had people lost touch with water, its potential, and what it represents? Were they numbed by a media culture that profited from fear? Snapper describes her hope that opera, if ejected from the opera house and steeped in water, could infuse souls:

[T]he idea that water [always] represents emotions in some fundamental way is all over our language. The idea of being flooded with emotion, or storms of rage, or raining tears. It's very raw. [Water is a] technology that gets people feeling in a new way. My hope is to use that technology in a way that is more fresh and more immediate and really actually *can* work on people listening – which I think less and less happens in the *opera house*. I think we need to take it out of the opera house

and bring bodies together. It can work against that separating damage. That idea of pulling people apart and pulling them away from their emotions, so that we are unable to feel [that] we are paralyzed, we are scared, we are away from each other. Maybe opera can help us to bind in new ways, to feel what we're feeling. (Vestinavesti 2009)

Because water can represent extreme emotion, Snapper believes that to connect with water is to foster our engagement with our feelings. She views underwater singing as a medium through which to address a society distanced from itself and from emotion, paralyzed by the prospect of the end of time. Additionally, for Snapper, singing under water is an adaptive strategy for basic and artistic survival post-Apocalypse. She wonders: instead of accepting watery engulfment as the conclusion of our story, could one *adapt* to this new state? Snapper says: "I am interested in what it means to accept the end of things – instead of trying to keep things that are dear to us alive at any cost" (Kumerdej 2008). Thus, the *Five Fathoms Opera Project*, of which there are several versions (the earliest in 2007), was born from the idea of adapting singing to the condition of the end of time and, through this adaptation, defying the end of time as proposed by Evangelical Christian leaders.⁵

At the beginning of the version of *Five Fathoms* entitled "You Who Will Emerge From the Flood," Snapper enters the pool area in a costume, designed by Susan Matheson, that looks like a beautiful, yet eerie, transformation of seaweed into dress. Thus it is evident, even in their manner of dress, that the characters have learned to live in and with the water instead of allowing it to overwhelm them. Two men, bearing oars longer than they are tall, escort Snapper; later a full chorus comes on the scene, and the drama unfolds by the side of the pool, in the water, on an underwater stage, and on a video projection (Figure 2). Metaphorically, this is an expression of human creativity that defies the end of the time. Seen in this context, one way of reading the *Five Fathoms Opera Project* is as a thorough undermining of the attitude exhibited by the Evangelical Christians who viewed Katrina as divine punishment for homosexual activity.⁶

Spilling the Truth

Several striking elements indicate a continuum between Snapper's *The Judas Cradle* (hereafter *JC*) and *Five Fathoms Opera Project* (hereafter *FF*). The unusual vocalizations that characterize both pieces arise from severe corporeal transformations. In *JC*, Ron Athey's glossolalia spills out of him because God's presence has overtaken his body; Snapper's trained voice breaks because she is hanging upside down.⁷ In *FF*, Snapper's entire vocal repertoire and sonority are transformed by her aquatic immersion. Whether by utilizing glossolalia in a queer masochistic performance; by breaking the body in order to break through operatic training; or by defying the

Figure 2

Snapper in "You Who Will
Emerge from the Flood"
with João Tavares da
Rocha and Hugo Veludo.
Porto, Portugal, October
10, 2009. (Photo by
Silvana Torrinha.)



end of time by learning how to sing under water, Snapper and Athey play with subverting regimes of body and mind not by escaping or averting them, but by facing them in order to pervert them.

Both pieces are also extreme responses to various manifestations of control exerted through terror. The Judas cradle was a medieval European torture device, a pyramid-shaped apparatus onto which victims were lowered for penetration inflicted by their own body weight (see Figure 3 of Ron Athey, in *JC*). *FF* is also a response to horrific events. The title combines an adaptation of a Shakespearian song – sung by the spirit Ariel to a shipwrecked prince in *The Tempest* – with a quote from Berthold Brecht's poem trio, *An die Nachgeborenen (To Those Born Late)* (1976). Set to music by Hanns Eisler (Brecht and Henneberg 1984), Brecht's poem is addressed to survivors of world-annihilating tragedy, asking them to remember those who caused the tragedy with understanding. (This song is performed twice during *FF*.) Both pieces are perversions of dominant narratives that significantly influence how the world appears to be configured. In *FF* Snapper teaches that even after



Figure 3
Ron Athey on the Judas
cradle. (Photo by
Manuel Vason).

the flood, promised by Judeo-Christianity to destroy the world, humans can find the strength to survive, even to make music. And in *JC* she exaggerates conventional Western narratives of male and female sexuality, to demonstrate how those narratives cruelly demand impossible confinements of the human body. Moreover, there are unavoidable parallels between the Judas cradle and the similarly antique “no-touch torture” technique of waterboarding. The latter is frequently discussed in the early twenty-first century, as the United States government’s so-called “anti-terror” program continues to use waterboarding to obtain confessions. *FF* is also a response to Judeo-Christian tales of the ultimate punishment –

annihilation. In fact both pieces offer intense critiques of Christian values. The masochistic aspects of *JC* draw on a long history of Christian martyrdom, in which we find repeated re-embodiments of Jesus' hanging, pierced, dismembered body.

Perhaps hoping to shed the undesirable trappings of her inherited Judeo-Christian culture, in *JC* and *FF* Snapper forcibly divorces herself from the hyperbolic discipline of the operatic body. Opera, along with ballet, is arguably one of the most extreme of the arts that involve the "regimentation of the female body to attain an ideal" (Jones 2006: 167). And while in *JC* both performing and listening bodies are sonically and metaphorically penetrated through a "(masochistic) enactment of pain" (Jones 2006: 167), the setting of *FF* enacts the ultimate cradle, the embrace of oceanic depths, celebrated and feared since the beginning of history. Notably, in many Western myths, the ocean is personified with the mutated female forms of sirens and mermaids. Thus, in a connection to which I will return below, the flood, the Apocalypse, is associated with the female in Western mythology. Snapper knows that her work is unavoidably received within such contexts, and so deliberately alludes to multiple penetrations of the female/oceanic body, that enable it to absorb and exude sound.

Situating Snapper's Compositional and Vocal Practice in *Five Fathoms Opera Project*

While it may seem natural to locate Snapper within the lineage of extended vocal technique, Snapper understands her endeavor as a *breakdown* rather than an extension of vocal technique.⁸ Snapper likens the process of breaking down her instrument to the "preparation" of instruments investigated by experimental composers in the 1950s, such as John Cage and Peter Yates. To "prepare" a piano or guitar is to distort the instrument's usual capabilities by inserting alien objects, causing the instrument to create new, distinctive sounds. Similarly Snapper distorts the sound of the operatic voice by penetrating, mutilating, or inhibiting the human body. In *JC*, Athey's anus is penetrated by the Judas cradle and his soul by the Holy Spirit, Snapper's vocal body temporarily deformed by being tied upside down; and in *FF* being underwater prevents her from drawing breath. As a practice, "preparation" evidences a desire to interrupt and disturb traditional human relationships with instruments and their histories, as well as curiosity and adventurousness about sound. We might also imagine Snapper's vocal "preparation" as a way to remark upon, negotiate, and play with the boundaries between nature and culture: between the female voice historically understood as uncontrollable or "natural," and the operatic voice as refined and controlled.

Despite Snapper's breakdown of her instrument in pursuit of new sonorities, at the core of her work is a committed if fraught relationship to operatic technique and tradition. Says Snapper:

It is an amazing feeling to sing operatically. All of this power gushing from your center! I trust it beyond any other means of communication. It is totalizing, erotic, uncanny. Every part of you is active, your insides are turned out. That's why I center my work within operatic singing ... and explore the limits of the voice by directly addressing my body. (Sulej 2010)

To Snapper there is nothing more uncanny than operatic vocal technique, except possibly the form of opera itself. This idea raises another relationship that foregrounds a fantastical aspect of Snapper's practice: the metaphorical juxtaposition of this arguably most artificial of vocal forms, opera, with dolphins, whales, and shrimps' sonorous communications within bodies of water.⁹ In this relationship it is important for Snapper that she never becomes comfortable with singing in her newly chosen element, whether upside down or under water. To her, the newness of the element for both herself and the audience enables the old operatic media to be transformative.

I like struggling with a mastery that is no longer fully relevant (bel canto) and having to transform it into something else again and again. Singing underwater is still the most physically demanding because there are serious dangers attached to it - like bursting a lung or drowning [only three teaspoons of water in the lungs will do it!]. Plus it just takes more energy to expel sound into water because it is so dense. But singing upside down was emotionally taxing. Maybe because your heart and head fill with blood, or for the way that failure happens gradually. (Sulej 2010)

Beyond the obvious parallel of the marine environment, Snapper's work has much in common with that of other late twentieth-century composers who explored the sonic possibilities of aquatics. The composers with whom I see Snapper most closely aligning herself are not those who splash and drip, foregrounding the sounds of water; but rather those who work with sound *in* water.¹⁰ Major composers who deal with the acoustic environment offered by water include John Cage with Lou Harrison (*Double Music*, 1941), Max Neuhaus (*Whistle Music*, 1971), and Michel Redolfi (various works between 1981 and the present).¹¹ With Cage and Harrison, Snapper shares the notion of changing the sounds of a familiar source by immersing it in water. With Neuhaus, she shares the desire to eject music from concert spaces and institutions, and to showcase the sonorous possibilities of traditionally "non-musical" environments. And with Redolfi, Snapper shares a fascination with adapting instruments, performers, and listeners to an aquatic medium. However, Snapper is the first to concentrate on *singing* underwater. Among Redolfi's approximately 200 underwater pieces, for which

he has tried to perfect various custom-built instruments (mostly based on percussive principles), only a few pieces were created for voice. But whereas Redolfi is disturbed by the bubbles resultant from air-based instruments underwater, and therefore avoids such instruments altogether (Redolfi 2008); for Snapper, causing bubbles is part of the performative experience, and the idiosyncratic sounds of bursting bubbles form an aspect of the music.

Snapper sees herself as extending and dialoguing with the operatic form – as part of its monodramatic lineage. She views her work as a continuation of the one-character opera tradition. In her own scholarship she identifies Arnold Schoenberg's *Erwartung* (1909) with Marie Pappenheim, librettist, as prompting a flurry of postwar single-voice dramatic works, such as Francis Poulenc's *La Voix Humaine* (1958); Peter Maxwell Davies' *The Medium* (1981); and Luciano Berio's and Cathy Berberian's *Visage* (1961) (Snapper, forthcoming).¹² In the interest of exploring media and sonorities, these monodramas were carried out as both live performances and tape pieces, in all of which the feminine body acts out madness operatically. While mostly featuring women, the mad figure might also be a feminine man, or a man rendered effeminate by his madness – for example, in Maxwell Davies' *8 Songs for a Mad King*.¹³

Snapper sees this repertoire as "hysterical" because of the extreme extent to which it "re-arranges the body of the singer" in ways that affect vocal quality (Sulej 2010). This rearrangement "extends outward from [the performer's] body" – affecting the other musicians' and the audience's empathetic bodies, "rearranging" our ingrained notions of music as a metaphysical experience. As we may be lulled into believing that we are completely disconnected from the broadcasted suffering that we watch from the comfort of our homes, so we can persuade ourselves that music, fleeting and seemingly intangible, causes no lasting consequences. Snapper attempts to rearrange these beliefs through what she calls "hystericism" – alluding not to an illness, like the hysteria historically assigned to women who did not align with prescribed gender roles, but to a technical approach to technique that deliberately harnesses physical responses to terror in a musico-dramatic operation. While her performances are not *about* hystericism, her objective is to "harness the technology of hystericism" – to redirect the kinds of energy that propagate a growing culture of fear (Sulej 2010).

Through hystericism Snapper addresses ways in which women are silenced, prevented from using their voices in ways that seem proper and natural to them; the ways this silencing plays out in emotionally lonely places; and her personal experiences as a woman with a fundamental distrust of language. After Snapper lost the ability to speak for a period of some weeks at the age of nineteen, her relationship to verbal discourse, and to social expectations grounded in language, became a deeply distrustful one. While she could articulate words during this period, she

could not form sentences or sing lyrics. Naturally this resulted in an inability to explain herself (and how can a nineteen-year-old explain that she has suddenly lost her grasp of language?). Though she attempted to communicate with her eyes and with non-verbal sounds, she loathed the powerlessness that came with being half-mute. Snapper views her vocal compositions, consisting largely of wordless, gestural music, as a reaction to her own abandonment by language.

Singing under Water

As she gradually adjusts to new self-imposed linguistic and physical constraints, Snapper's practice in the *Five Fathoms Opera Project* involves continually pushing her body towards a moment of surprise. She first experimented at home, in the bathtub. Her first performances, too, were in bathtubs. "Once I got the hang of, well I am still getting a hang of it," Snapper shares, "I started working with movement, different depths, different apertures" (interview, December 2008) (Figure 4). When she described her process to me, we agreed that the best way for her to demonstrate being overwhelmed by a new environment was to take me through a comparative experience. So, in spring of 2010 I took a group of graduate students to the Standard Hotel in downtown Los Angeles. We gathered in their rooftop bar with fire-truck-red waterbeds and a large saline swimming pool, one of Snapper's many performance venues.

Once we were in the water, Snapper took us through some exercises. The first formed us into pairs; one person gently held the other under water, while the person underwater made sounds. I was paired with Natalia, who shouted – but with my ears above water I didn't hear her voice (Figure 5). We tried another strategy: one person



Figure 4
Snapper performing
"Five Fathoms Deep
my Father Lies" at P.S.1
Contemporary Art Center/
MoMA, New York City,
March 15, 2008. (Photo by
Marina Ancona.)

Figure 5

The author with Natalia Bieletto (under water).
Aquaopera #4/Los Angeles,
April 28, 2010. (Photo by
Jillian Rogers.)



made sounds under water while the rest of us put our heads and ears in. This enabled us to hear him. We found that the deeper into the water we descended, the more difficult it was to sing high notes. Fast tempi were also difficult to maintain; Natalia's attempt resulted in muddled sounds. Surprisingly, while sung sounds generally didn't seem very loud, small internal throat sounds were incredibly powerful. They boomed, beamed and spread, and were almost overbearing. These exercises demonstrate the extent to which the medium in which sound waves flow affects their characteristics: their speed, direction, and so on. It also shows that in order to register sound, the listening body (including the head) must be immersed in the material through which the sound flows.

The next exercise linked the six of us together by the arms; three participants stood in a line, with their backs against three others. We sang in a drone-like manner, playing with our voices above the water, at its surface, slowly descending into it. We felt the sonic vibrations largely through direct contact with each other's bodies. Of course sound also passed through the air and the water, but because the most immediate path was from one body to another, this was the sensation that overpowered us.

When we ended the day by gathering around the poolside fireplace, we discussed how taken we were with how different singing felt in a liquid environment. We had found that aural experience is predicated on our physical contact with sound waves through shared media, in this case water and air, flesh and bone. We noted that the shared medium makes a great deal of difference to how we experience the voice, and that the sound ultimately heard depends partly on what is sung, partly on the medium through which it passes

and how our bodies interact with that medium. In other words, in Snapper's workshop we discovered that sound is a multisensory experience, tactile as well as aural.

Snapper's exercises revealed that music-making involves more than traditional theories and notation can capture. Therefore, although some of us were singers with decades of training, we felt that little of our experience could effectively apply or even seem relevant under water. We wondered: Why did singing and listening under water feel so different from the same experiences in air? And how might this difference relate to a consideration of voice, listening, and community?

The Sensing Body in Relation to the Material World

Singing in water sounds so different from the way it sounds in air largely because, as Julian Henriques notes, unlike transverse waves of light, longitudinal waves of sound require a medium through which to propagate (2010: 66). Hence the speed at which sound waves travel depends on the density and compressibility of the medium through which they pass. Consequently sound cannot travel through a vacuum.¹⁴ Because higher densities and compressions engender slower speeds – and, relative to air, water is very dense but nearly incompressible – the speed of sound in water is generally about four times faster than the speed of sound in air, with slight variations depending on several factors. These factors include water quality (distilled or salted, warm or cool), and hydrostatic pressure (which in turn depends on the distance below the surface at which an object sounds).¹⁵ That is why Natalia's up-tempo tune sounded muddled under water, and Snapper therefore chooses slower tempi for underwater music than for music sung in air.

The specific relationship between our material bodies and the materials in which we immerse also affects how we experience sounds. In its unfamiliarity, listening underwater brings the relationship between sound, matter, and eardrum – which in air we take for granted – into relief. Because the density of the human eardrum is very similar to that of water, the eardrum does not provide the resistance necessary to translate underwater vibrations into tympanic movements, that is, into sound that eardrums can register. When we listen under water, many vibrations pass through our eardrums without registering as sound. However, because our skull bones are dense enough to convey the sound, the skull bones, rather than the eardrums, capture most of the sounds that humans do manage to register underwater. As a result the sound resonates in the body, going directly to the inner ear and circumventing the eardrum. Like air and water, the eardrum and skull bones are media through which sound passes, and by which its character is affected.

The part of the body that registers sound also plays a role in its apparent directionality. For example, our ability to hear in "stereo" – two distinct signals, left and right – is the result of sound entering

our bodies from two directions (two ears). In contrast, when the inner ear registers sound via the skull bones, rather than with the left and right eardrums, the sound seems to be omnidirectional rather than stereo.¹⁶ Because the sound waves vibrate the bones of the listener's body, her perception is that her own body created the sound. The sound becomes a "state" or "quality" of the listener's body – in Stefan Helmreich's description, a "soundstate" (2007: 624). In effect, at an underwater performance where the audience and performers are immersed, the singer's body, the water, and the audiences' bodies become one vibrating mass, a single pulsating speaker.¹⁷

Overall, Snapper's fascinating displacement of singing to the underwater realm reminds us of the physical realities of sound, and shows us that the medium through which sound travels configures the music we experience as much, if not more, than our understanding of music as pitches, rhythms, harmonies, or textures – parameters usually favored in Western musical analyses. By accentuating the body's and the environment's roles in the experience of music, Snapper proves that the longstanding narratives of sound's ineffable "ethereality" and music's quantitative abstraction hinge on concrete events occurring within material bodies.

Sensing Voice

An approach to sound as materially bound offers points of departure from the mechanistic, scientific, and utilitarian metaphors prevalent in Western discourse, as from metaphors grounded in visually oriented epistemologies (e.g. sound waves, X-rays, sonograms) (see Rodgers, forthcoming). Instead, multisensory perspectives recognize sound as affective and open-ended processes. Snapper's practice offers just such perspectives, working from the premise that sounds come into being as eventual processes of touch and movement. She grounds her vocal practice in a materialistic epistemology centered on the human body and its surroundings, that nonetheless refuses to treat them as stable, a priori entities encapsulated by given scientific laws. Thus her undertaking joins a rich chain of feminist work on the materiality of the human body, and its configuration within social and cultural frameworks.

Through the idiosyncratic vocal practice that I at first dismissed, Snapper effectively addresses familiar ideas about gender, nature, and culture; and begs us to reflect on the material and embodied aspects of sound, music-making, and music's reception. She challenges notions of the female body's dangerous ambiguity that have survived across millennia, geographies, and cultures in stories of sirens' and mermaids' seductive and enveloping voices. By descending into water with excessive performative expressions, costumes, set designs, and vocal sounds, and inviting her audience with her, Snapper confronts head-on the pervasive cross-cultural

ambivalence about the female body. Moreover, literally and figuratively, the underwater female body and its material form symbolize the feminine embrace and the allure of humans' complete dependency on the woman's body while *in utero*.¹⁸

"To be present in the world," writes Simone de Beauvoir, "implies strictly that there exists a body which is at once a material thing in the world and a point of view towards the world" (1974: 7). Beauvoir recognized that it is impossible to locate a body outside its performative representation of culture. In other words, she recognized that material in a "natural" state is a phantasm to which we do not have unmediated access. Rather, the materiality to which we do have access is produced by, and reinstantiates, ideas and representations which are unavoidably subject to power relations. In a response to feminist scholarship's debate about the relationship between materiality, performativity, and "nature" in the question of sex and gender, Toril Moi (1999) offers the image of the *lived body* (replacing categories of both sex and gender) as a means of illustrating the involvement of our bodily characteristics in the formation of a lived experience of the material world. This lived body is embedded in and subject to cultural forces at a foundational level. And it is this body, whose perceptual system has been "tuned" by a given culture, that is the perceiving conduit of sound.

By highlighting the material aspects of sound and their reception, Snapper reminds us that *what we hear* depends as much on our materiality, physicality, and cultural and social histories, as it does on so-called objective measurements (decibel level, soundwave count, or score) which are themselves mere representations. Indeed, the experience of sound is a triangulation of events wherein physical impulses (sonic vibrations), our bodies' encultured capacity to receive these vibrations, and how we have been taught to understand them are at constant play and subject to negotiation. In the experience of sound, what becomes clear is not a stable explanation of what sound or music *is*. Instead, we are guided to understand that each such account is a composite manifestation of our understanding of sound at a given moment in time and place.

Snapper's idiosyncratic vocal practice stimulates us to consider how music as a material endeavor with physical consequences – through which our own and others' bodies are engaged and impacted – contributes to a modern sense of subjectivity and intersubjectivity. In such light, music can no longer be dealt with at arm's length, on a representational level. Indeed, if, as T.S. Eliot's classic phrase succinctly captures, "you are the music while the music lasts," Snapper's practice is a resounding reminder of why analyses of sound and music, albeit continuously negotiated and defined, cannot be divorced from a sociohistorically bound consideration of its material condition and sensuous pulsation.

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Notes

1. See Adriana Cavarero for a thorough discussion of voice and logos (2006: 1–78), as well as a nuanced commentary and critique of Derrida's notion of voice and presence (213–41). In her study of immersion and embodiment in new media, Frances Dyson observes: "the aural has been muted, idealized, ignored, and silenced by the very words used to describe it" (2009:4).
2. In addition to the works already mentioned, some foundational and influential examples of sensory inquiries include Ihde (1976), Seremetakis (1996), Stöller (1997), Corbin (1999 [1998]), Geurts (2002), and Howes (2005).
3. Snapper's underwater performances thus far include:
 - "Aquaopera #1/Palm Springs," collaboration with Jeanine Oleson; pool at private residence in Palm Springs, CA; July 14, 2007.
 - "Aquaopera #2/San Francisco," Shotwell Shack Series; bathroom collaboration with Jeanine Oleson; San Francisco, CA; July 20, 2007.
 - "Five Fathoms Deep My Father Lies," P.S.1 Contemporary Art Center/MoMA, New York City; March 15, 2008.
 - "Five Fathoms Deep My Father Lies," Redcat Series at the Standard Hotel rooftop pool, Los Angeles, CA; November 12, 2008.
 - "Five Fathoms Deep My Father Lies," Aksioma, Institute for Contemporary Arts; sound design by Pieter Snapper; participation by full chorus; Ljubljana, Slovenia; June 20, 2008.
 - "You Who Will Emerge From the Flood," collaboration with Andrew Infanti, full chorus; Queer Up North Festival, Manchester, England; May 17, 2009.
 - "Aquaopera #3/New York," Artist residency, workshops, and performance; collaboration with Jeanine Oleson; Denniston Hill Residency, Woodridge, NY; August and September 2009.
 - "Five Fathoms Deep My Father Lies," collaboration with Jeanine Oleson; Viva! Art+Action Festival, Montreal, Canada; September 18, 2009.
 - "You Who Will Emerge From the Flood," collaboration with Andrew; full chorus; TRAMA Festival de Artes Performativas, Porto, Portugal; October 10, 2009.

- "Aquaopera #4/Los Angeles," Standard Hotel; April 28, 2010.
 - "You Who Will Emerge From the Flood," collaboration with Andrew Infanti, full chorus; Theatr Dramatyczny festival "Migracje", Warsaw, Poland; October 24, 2010.
4. This is even more pressing as we currently (autumn 2010) witness the flood in Pakistan, with a magnitude of thirteen Katrinas, and the world's seeming unwillingness to come to the victims' aid (1.5 million affected people in New Orleans versus 20 million in Pakistan). http://www.dhs.gov/xfoia/archives/gc_1157649340100.shtm consulted for the New Orleans number (September 21, 2010); <http://www.reuters.com/article/idUSTRE66T3RS20100814> for Pakistan numbers (October 24, 2010.)
 5. The project as a whole is entitled the *Five Fathoms Opera Project*. The workshop version I participated in with my students is called "Aquaopera #4/Los Angeles." Currently, there are two additional distinct performances under the *Five Fathoms Opera Project* umbrella, "Five Fathoms Deep My Father Lies" (with sound design by Snapper) and "You Who Will Emerge from the Flood." The latter is a large-scale show with choir for which Andrew Infanti has composed some of the music. A thorough analysis of the music of these different iterations is forthcoming.
 6. Conceived and performed by Ron Athey and Juliana Snapper, sound design by Amanda Piasecki and costume design by Susan Mattheson. For a perspective on the queer performative ethics of this piece, see Jones (2006).
 7. Raised as a fundamentalist Pentecostal minister's son, Athey often talks about his childhood ability to speak in tongues. See "Biography" on <http://www.ronathey.com>.
 8. Snapper's main concern is the body and its mechanism and state; the sound is secondary. In contrast, and to describe the following singers in a brief manner (which unfortunately does not offer adequate nuance to their practice), Joan La Barbara explores voice as an instrument; classically trained and celebrated Cathy Berberian also investigates voice's sonic range, often inspired by popular culture from radio and Hollywood movies to cartoons; Meredith Monk tries to access the sonic space of the prelinguistic voice; while Diamanda Galas scrutinizes the sound of a psychic space.
 9. Snapper's performances have thus far been staged in pools rather than in the ocean. For obvious reasons, singing under water is much more risky than playing an instrument. Working with researchers from the Scripps Institute of Oceanography, Snapper is gradually developing a practice suited to the ocean. To learn about sounds not native to the ocean, or, underwater sound pollution, please see McCarthy (2004).
 10. For a discussion of some music dealing with water without immersion, see Kahn (1999: 245–88).

11. According to Douglas Kahn, Cage himself traces his use of water to much later. In 1973 at UCLA he accompanied water ballet swimmers and sought to find a way to cue them while under water (1999: 249).
12. Schoenberg asked Marie Pappenheim, a young doctor in his circle, to write a libretto on a topic of her choosing for his opera in which the music would be controlled by the structure of the unconscious. Judging from her libretto, the social and professional circles she frequented in Vienna, it seems like Pappenheim was familiar with the period's psychoanalytical thought and literature. It is also interesting to note that Bertha Pappenheim – the woman, 'Anna O,' with whom Joseph Breuer worked for a number of years, and whose treatment Breuer and Sigmund Freud chronicled – has been identified as being related to Marie Pappenheim. For an extensive discussion on the scholarship on this topic, see Carpenter (2010).
13. For a thoughtful analysis of how people are judged to a significant degree by the sound of their voices as "sane or insane," "male, female," etc., and how insanity and femininity are two concepts bound together in the voice, see Carson (1995 [1992]: 119–42).
14. For histories of underwater acoustics, see Hersey (1977), Medwin (2005), Schlee (1973), and Urlick (1983).
15. For more detailed information on the speed of sound in liquid, see Medwin (2005).
16. Friedrich Kittler (1999) posits that the stereo spatialization of cranial interiors only became possible with headphones.
17. The late composer and sound artist Maryanne Amacher worked with expanding our ways of hearing sound by purposefully using the physicality of the body beyond the eardrum for transmission. What she dubbed "direct sound" – sound being sent toward listeners, aiming for the eardrum – is the default listening mode, which we often imagine to be the only option. In contrast, Amacher worked with frequencies distributed through space such that the body itself would function as a speaker.
18. It is interesting to observe that sharing the medium of water (versus air) seems to be perceived as "more material," and to incite stronger visceral feelings in people. This is perhaps why policies regarding the sharing of the watery medium have often been enforced, such as pools segregated by gender and race.

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